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ABSTRACT

This paper proposes a systematic approach to the application of assistive technology that takes advantage of the strengths of key members of the rehabilitation team. The report begins by describing the roles of the vocational rehabilitation counselor, the vocational evaluator, and the assistive technology practitioner. The limitations of the current fragmented system are outlined and a team approach geared toward bringing together the necessary expertise to evaluate the use of assistive technology is discussed. Several approaches to client placement are outlined. In the first, the counselor directly places clients with clear vocational objectives into employment without involving other members of the technology team. However, if vocational objectives are unclear, the client would be referred to the vocational evaluator, who would then determine if technology could be utilized to assist the client in entering employment and would call in the appropriate assistive technology practitioner based upon the area of the functional limitation. This approach, by designating the vocational evaluator as the professional who determines that technological intervention may be appropriate, would ensure that the utilization of technology would not be a chance occurrence. A worksite accommodation cost analysis survey is attached to the report. (Author/CR)

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THE REHABILITATION TEAM: A SYSTEMATIC APPROACH FOR USE OF TECHNOLOGY IN VOCATIONAL REHABILITATION SERVICES

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Abstract: Although assistive technology has been around for years, its use has recently begun to proliferate. However, rapid growth tends to retard the development of a systematic approach that facilitates coordinated delivery of services. This article proposes a systematic approach to the application of assistive technology, one that takes advantage of the strengths of key members of the rehabilitation team.

Background

In situations where assistive technology is an issue in meeting employment goals, there are three main service providers available to assist vocational rehabilitation clients in becoming successfully employed. There is the vocational rehabilitation counselor; the vocational evaluator; and (when available) the assistive technology practitioner. Each of these entities has a unique set of skills; however, no one of them can possibly have all of the knowledge and skills at his/her disposal to determine the need for appropriate assistive technology, to apply the technology, and to facilitate job placement. For this reason, it is essential that a team approach be developed to pull together all of the necessary expertise to make successful use of assistive technology. The vocational evaluator is in a position to be the central member of this team. Vocational evaluators provide client assessment services which assist the VR counselor in identifying appropriate job options. However, vocational evaluators do not solicit clients; they provide services only to those clients referred to evaluation by the VR counselor. Similarly, assistive technology practitioners do not become involved in cases until they are called upon by a counselor or other VR professional. Due to this fragmented (non) system, assistive technology is utilized only if some unspecified VR professional happens to think that technology might provide a solution. Generally speaking, there is no process in place wherein a central figure makes a determination that an assistive technology intervention may be appropriate.

According to Langton (1991), "Establishing a 'technology team' comprised of staff from varied backgrounds would be a feasible way for large facilities or agencies to provide these services" (p.5). Reed, Fried, & Grimm (1993) state that "Realizing that in most cases it may prove impossible for the evaluation staff to master all of the many, diverse areas of assistive technology, the staff might want to consider developing a network." (p.218). Chubon, Stewart, and McGrew (1991) state that "Whether or not assistive technology will benefit persons with disabilities is largely dependent upon counselors and other evaluators becoming knowledgeable of its use and aware of supporting resources, particularly rehabilitation engineering services." (p. 258)

The need for vocational evaluators to assume a key role in the technology team is documented in a number of sources. Langton notes that "...the vocational evaluator could be the connecting link necessary to make more effective use of technology resources. With skills in assessment and job analysis techniques, the vocational evaluator is well qualified to identify the need for assistive technology and to match these needs with available resources." (p.6) Reed et al. noted that "Individuals and evaluation/assessment programs that have positioned themselves to effectively address technology questions will be in demand." (p.220)

Chubon et al. called for vocational evaluators to increase their role in bringing assistive technology into the vocational rehabilitation process, stating that "Although [recent] assessment developments are impressive, there are areas [of vocational evaluation] where progress has not kept pace. These include consideration of the extent to which technology can enhance the functional capacity of persons with disabilities, and the extent to which technology can be used to accommodate diminished functional capacity through adaptations in the work place." (p.255)

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Problem Statement

Traditionally, vocational rehabilitation counselors have placed clients with visible job skills in employment, providing counseling and guidance, physical restoration, and training when appropriate. If there are functional limitations that prevent the client from performing a given job, or if the VR counselor is uncertain as to the client's ability to perform a given job, the traditional referral has been to avocational evaluator. The evaluator's job is to determine the extent of the client's functional limitations and to determine vocational goals that are realistic for the client based on these functional limitations. However, vocational evaluators have traditionally recommended employment fields that did not require functioning in the areas of functional limitation. The availability of rehabilitation technology aids and devices has made it possible for vocational evaluators to consider another avenue for making vocational recommendations; the recommendation for assistive aids or devices that would permit a client to perform a given task regardless of functional limitations. That is, the evaluator can recommend that a rehabilitation engineer or other assistive technology provider be consulted to prescribe a rehabilitation technology intervention, possibly a piece of assistive technology equipment that would negate the functional limitation.

In order for this to happen, however, there must be a team approach that is geared towards bringing together the necessary expertise to consider the use of assistive technology when appropriate. Presently, it appears that technology is utilized only when there is an interested individual somewhere among the ranks of VR counselors or evaluators.

Approach

In order to consider an approach, it is first necessary to look at the major entities and to determine their strengths. By utilizing this method, it is possible to develop a systematic approach that fully utilizes each participant's unique skills and abilities to the client's best advantage.

The VR counselor excels in eligibility determination, counseling and guidance, service planning (IWRP development), employer liaison, job placement, and follow-up. Counselors tend to have large caseloads, and therefore the majority of their energies must be devoted to case management. If the counselor is able to place a client with no barriers to a chosen job field into employment, he/she will do so, providing counseling and guidance, training, or other substantial services. However, if the counselor is uncertain as to the abilities and interests of the client, a referral will be made to a vocational evaluator.

The vocational evaluator is proficient at assessing job skills, determining strengths and weaknesses, assessing interests, assessing physical and mental abilities, and recommending vocational objectives. When making vocational recommendations, the evaluator does so in light of the client's functional limitations. Therefore, a decision that must be made by the evaluator is whether employment recommendations must be in areas that do not require functioning in deficit areas, or if the application of assistive technology can assist the client in overcoming the functional limitations and enable him/her to successfully perform job tasks by utilizing an assistive device. Once the evaluator determines that technology may be helpful, a referral is made to an appropriate assistive technology practitioner.

The assistive technologypractitioner may come from any one of several fields, depending upon the area of the functional limitation under consideration. Possible areas of expertise include ergonomics, seating and positioning, knowledge of existing assistive devices, ability to adapt existing devices, ability to fabricate devices, communications, computer utilization, etc. A.T. practitioners may come from a variety of backgrounds, including engineering, OT, PT, speech/language pathology, industrial design, computer science, etc. This person's job would be to consider input from the vocational evaluator, to provide a device or other accommodation to enable the client to perform a given task, and to train the client in its use when appropriate.

It is recommended that a systematic approach be implemented that would ensure that technology is considered in cases where it may be appropriate. Under this approach, the counselor would directly place clients who have clear vocational objectives into employment without involving other members of the technology team. If vocational objectives are questionable, the client would be referred to the vocational evaluator. If, in the course of the evaluation, the evaluator determines that technology could be utilized to assist the client in entering employment, the evaluator would call in the appropriate A.T. practitioner based upon the area of the functional limitation. This approach would ensure that the utilization of technology would not be merely a chance occurrence by designating the vocational evaluator as the professional who (based upon behavioral observation) determines that technological intervention may be appropriate. This is not to say that a VR counselor may not recognize the need for technology earlier in the process; if this recognition occurs, the VR counselor may decide to call upon an A.T. practitioner earlier in the process. However, utilizing this systematic approach would increase the chance of the introduction of technology into the

client's rehabilitation plan by ensuring that a protocol is in place that would facilitate its consideration at some point.

As with any new initiative, training will be a central issue. To specify the vocational evaluator as the central referral source without equipping the evaluator with the knowledge and awareness of the utilization of assistive technology would be to ensure the failure of the system.

Implications

A technology team approach would make better use of existing resources. It would ensure that technology is considered in all cases wherein it may be appropriate, and it would ensure that the utilization of appropriate professionals was optimized. This would, in turn, create more client satisfaction, since many jobs that may have been ruled out in the past will still be considered, adding to the list of potential vocations and giving the client more choices.

Discussion

The VR counselor provides an array of substantial services to a large number of clients. While the counselor may be interested in assistive technology, he/she is not in a position to recommend technology, since it would be necessary to observe the client's behaviors over a significant period of time in order to assess the necessity and appropriateness of technology. The vocational evaluator, on the other hand, has the client under observation from one day to two weeks, depending on circumstances (Flynn, 1994). The evaluation process enables the evaluator to observe the client's adaptive behaviors and to formulate ideas as to technological interventions that could assist the client's natural attempts at overcoming his/her functional limitations.

Once the decision is made that the use of rehabilitation technology is a feasible solution, the evaluator will then decide which AT practitioner to call upon to recommend, adapt, or fabricate a device or other appropriate worksite modification. The AT practitioner will then provide the device or other intervention, train the client, and set up the work site. At this point, the VR counselor begins follow-up, ensuring employer and client satisfaction, monitoring the situation for any needed adjustments. The vocational evaluator's job is completed for this client; the A.T. practitioner will be called upon again only if there is a need for adjustment or reassessment of the adaptation.

By utilizing this team approach, each entity will be used to its full potential. The use of technology in vocational rehabilitation will be maximized. However, the biggest winner will be the client, who will have a much better chance of working in a rewarding occupation rather than having to settle for a less than satisfying job due to some physical limitation that is unaddressed by assistive technology.

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WORKSITE ACCOMMODATION

Cost Analysis Survey

The following information defines key terms that are referred to within the Form. When completing the information matrix in each section of the Form, please keep the following definitions in mind.

Unit: This is defined in most instances. If the unit is "hours", and you spend 30 minutes in this activity, the quantity should be listed as .5; two hours would be listed as 2; etc.

Quantity: This is the number of units provided, e.g., 1 hour, 25 miles, 3 days, etc.

Cost/Unit: This is the amount that you charge per hour, per mile, etc. If you do not charge anyone for services, please indicate the hourly compensation rate for the service provider.

Cost: This column is a product of the quantity of units multiplied by the cost per unit.

Service Provider(s): This is a list of the job title(s) of the person(s) who provided the services listed.

Funding source(s): Who paid for the listed service? You may include employers, insurance companies, worker's comp, the client, vocational rehabilitation, an assistive technology grant, or any other entity that actually bore the cost of the listed service.

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EVALUATION

The Evaluation Phase of worksite accommodation can include but is not limited to activities such as: needs identification, abilities assessment, feasibility study, and solution recommendation.

1. Where was the evaluation conducted?

❒ Worksite ❒ Home ❒ School ❒ Technology Service Provider's Facility ❒ Other _____

2. Who was involved in the evaluation? (check all that apply):

❒ Consumer **(01)** ❒ Family Member/Caregiver **(06)** ❒ Employer **(11)**
❒ Rehab Engineer **(02)** ❒ Physical Therapist **(07)** ❒ Speech/Language Pathologist **(12)**
❒ Voc. Evaluator **(03)** ❒ Occupational Therapist **(08)** ❒ Rehab Tech Supplier (DME) **(13)**
❒ VR Counselor **(04)** ❒ Orthotist/Prosthetist **(09)** ❒ Fabrication Technician **(14)**
❒ Physician **(05)** ❒ Rehab Tech Practitioner **(10)** ❒ Case Manager **(15)**
❒ Funding Spec. **(16)** ❒ Clerical **(17)** ❒ Other **(99)** _____

3. How many sessions did the evaluation require?

❒ One ❒ Two ❒ Three ❒ Four or More

4. Indicate the dates of Evaluation Phase: Started: _____ Completed: _____

5. Indicate all time spent, and any costs involved, in the evaluation phase in the following table:

DESCRIPTION	UNIT	NO. OF UNITS	COST PER UNIT (1)	TOTAL COST	SERVICE PROVIDER(S) (2)	FUNDING SOURCE(S) (3)
Flat Rate Charge for Evaluation (If applicable)						
If a flat rate is not charged, please itemize costs below:						
Evaluation	Hour					
Research, design and Documentation (If not included above)	Hour					
Evaluation Equipment Rental Costs						
Equipment Shipping and Handling						
Equipment Insurance						
Travel Mileage	Mile					
Travel Time	Hour					
Per Diem	Day					
OTHER						
SUBTOTAL OF EVALUATION TIME/COST						

(1) For services provided by rehabilitation technology staff from an agency, such as VR, please estimate the approximate staff cost per hour. (This should include salary, fringes, etc.)

(2) Utilizing two-digit code from item #2 above, indicate all service providers who are involved in each service activity (i.e. rehab engineers, occupational therapists, speech pathologist, fabrication technician, . . .)

(3) Indicate all sources of payment for services, equipment, or materials (i.e. VR, insurance, workers comp, employer, . . .)

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IMPLEMENTATION

③

The Implementation Phase would involve any activity necessary to complete the actual accommodation recommended in the Evaluation Phase. This would include design, fabrication, construction, and installation/set-up activities. It could also involve locating sources of funding, procurement, bidding, delivery, and consumer training.

1. Where was the implementation conducted?

❒ Worksite ❒ Home ❒ School ❒ Tech Service Provider's Facility ❒ Other_____

2. Who was involved in the Implementation? (Check all that apply):

❒ Consumer **(01)**	❒ Family Member/Caregiver **(06)**	❒ Employer **(11)**
❒ Rehab Engineer **(02)**	❒ Physical Therapist **(07)**	❒ Speech/Language Pathologist **(12)**
❒ Voc. Evaluator **(03)**	❒ Occupational Therapist **(08)**	❒ Rehab Tech Supplier (DME) **(13)**
❒ VR Counselor **(04)**	❒ Orthotist/Prosthetist **(09)**	❒ Fabrication Technician **(14)**
❒ Physician **(05)**	❒ Rehab Tech Practitioner **(10)**	❒ Case Manager **(15)**
❒ Funding Spec. **(16)**	❒ Clerical **(17)**	❒ Other **(99)** _____

3. Indicate the dates of the Implementation Phase: Started: _____ Completed: _____

4. If the employer was involved, what was the contribution? _____

_____

_____

5. If volunteers were involved, how much time was donated? _____

6. Briefly describe the accommodation: **(Attach extra sheet if necessary)**

_____

_____

_____

_____

_____

7. Indicate all time/costs involved in the Implementation Phase in the following table:

DESCRIPTION	UNIT	NO. OF UNITS	COST PER UNIT (1)	TOTAL COST	SERVICE PROVIDER(S) (2)	FUNDING SOURCE(S) (3)
Flat Rate (If applicable)						
If a flat rate is not charged, please itemize costs below:						
Research and Design	Hour					
Equipment						
Equipment Shipping & Handling						
Equipment Insurance						
Materials (for modification or custom fabrication						
Fabrication	Hour					
Training (for consumers or others)	Hour					
Travel Mileage	Mile					
Travel Time	Hour					
Per Diem	Day					
OTHER						
SUBTOTAL OF IMPLEMENTATION TIME/COST						

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FOLLOW-UP

④

Follow-up Phase activities include, but are not limited to: telephone contacts, site visits as needed, repairs and adjustments, etc.

1. Were follow-up services provided for this case? ❒ Yes ❒ No ❒ Not yet, but will be per follow-up schedule

2. How was the follow-up conducted? ❒ Telephone ❒ Letter ❒ On-site Visit ❒ Other _____

3. If on-site visit was made, where did this occur?

   ❒ Worksite ❒ Home ❒ School ❒ Tech Service Provider's Facility

   ❒ Other _____

4. Who was involved in the follow-up? (Check all that apply):

❒ Consumer **(01)**	❒ Family Member/Caregiver **(06)**	❒ Employer **(11)**
❒ Rehab Engineer **(02)**	❒ Physical Therapist **(07)**	❒ Speech/Language Pathologist **(12)**
❒ Voc. Evaluator **(03)**	❒ Occupational Therapist **(08)**	❒ Rehab Tech Supplier (DME) **(13)**
❒ VR Counselor **(04)**	❒ Orthotist/Prosthetist **(09)**	❒ Fabrication Technician **(14)**
❒ Physician **(05)**	❒ Rehab Tech Practitioner **(10)**	❒ Case Manager **(15)**
❒ Funding Spec. **(16)**	❒ Clerical **(17)**	❒ Other **(99)** _____

5. If the employer was involved in the follow-up, indicate what occurred:

_____

_____

_____

_____

6. Indicate all time/costs involved in the Follow-up Phase in the following table:

DESCRIPTION	UNIT	NO. OF UNITS	COST PER UNIT (1)	TOTAL COST	SERVICE PROVIDER(S) (2)	FUNDING SOURCE(S) (3)
Flat Rate Charge (If applicable)						
If a flat rate is not charged, please itemize costs below:						
Follow-up Visit (On-Site)	Hour					
Repairs/Adjustments (If not covered in above Follow-Up Visit)	Hour					
Travel Mileage	Mile					
Travel Time	Hour					
Per Diem	Day					
OTHER						
SUBTOTAL OF FOLLOW-UP TIME/COST						

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